

Appl. No. 09/916,247
Amdt. Dated January 21, 2004
Reply to Office action of October 22, 2003

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-25 (Canceled)

26. (Currently Amended) A process for filtering water containing solids with membranes in a tank comprising the steps of:

a) filling the tank with a feed water to be filtered to immerse the membranes;

b) creating a transmembrane pressure between a permeate side and a retentate side of the membranes, the retentate side of the membranes being in contact with the water in the tank at ambient pressure, the permeate side being subject to a negative pressure relative to the pressure of the water in the tank fluidly connected to a filtered permeate outlet, to generate a filtered permeate at the permeate outlet and a retentate in the tank;

c) aerating the membranes to dislodge solids from the membranes;

d) backwashing the membranes; and,

e) draining the tank of the retentate;

_____ wherein

_____ if) the steps above are performed in repeated cycles; and,

_____ iig) the steps of backwashing the membranes and draining the tank in a cycle may be performed either before the other or partially or substantially simultaneously; and,

hf) ~~the step of backwashing the membranes in the repeated cycles~~ periodically involves backwashing periodically wetting the membranes with a cleaning chemical having a selected concentration for a selected duration ~~in a first cycle~~ after performing step (b) in the a first cycle, without returning to step (b) in the first cycle and before starting a subsequent cycle.

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27. (Currently Amended) The process of claim 26 wherein the repeated cycles of part (fi) of claim 26 are repeated at least once a day and ~~the step of backwashing the membranes in the repeated cycles involves backwashing with a cleaning chemical~~ step (f) is repeated between once a day and once a ~~cycle~~ per cycle of part (i) of claim 26.

28. (Previously Presented) The process of claim 26 further comprising the steps of performing recovery cleanings from time to time to increase the permeability of the membranes wherein the steps of claim 26 are performed between the recovery cleanings and reduce the rate of decline in permeability of the membranes between the recovery cleanings.

29. (Currently Amended) The process of claim 26 wherein the sum of the products of the selected concentration of the cleaning chemical and the duration of the steps of backwashing with a cleaning chemical and selected duration of part (f) of claim 26 is between 2,000 min•mg/l and 20,000 min•mg/l per week over a period of at least 1 month when NaOCl is the cleaning chemical or an equivalent product of concentration and time of another cleaning chemical.

30. (Currently Amended) The process of claim 29 wherein the sum of the products of the selected concentration and selected duration of part (f) of claim 26 ~~the cleaning chemical and the duration of the steps of backwashing with a cleaning chemical~~ performed is between 5,000 min•mg/l and 10,000 min•mg/l per week over a period of at least one month when NaOCl is the cleaning chemical or an equivalent product of concentration and time of another cleaning chemical.

31. (Previously Presented) The process of claim 28 wherein the recovery cleanings are performed at least 1 month apart from each other.

32. (Previously Presented) The process of claim 28 wherein the filtered permeate generated at the permeate outlet is intended for use as drinking water and the cleaning chemical comprises an oxidant.

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33. (Currently Amended) The method of claim 29 wherein the steps of ~~backwashing with a cleaning chemical~~ part (f) of claim 26 are performed at regular intervals and each have about the same product of selected concentration and selected duration.

34. (Currently Amended) The method of claim 26 wherein the membranes are backwashed with permeate in the first cycle after ~~a step of backwashing with a cleaning chemical~~ step (f) of claim 26 in the first cycle and before starting the subsequent cycle.

35. (Currently Amended) The method of claim 26 wherein ~~the step of backwashing the membranes with a cleaning chemical~~ step (f) of claim 26 further comprises the steps of flowing water to the permeate side of the membranes and mixing a cleaning chemical into the flowing water.

36. (Previously Presented) The method of claim 26 wherein the membranes are hollow fibre porous membranes.